

USSR

UIC 639.3.331.5

GZHEGOTSKIY, M. I., DOLOSHITSKIY, S. L. and MARTINYUK, N. V., L'Vov Medical Institute

"Toxicity of Some Chlorine-Containing Herbicides for Fish"

Moscow, Rybnoye Khozyaystvo, No 8, 1971, pp 27-28

Abstract: The toxic effects of chlorine-containing, herbicides acting on roots (propazin, piramin, tselatoks and alitsep) and of chlorine-containing carbamate herbicides (avadeks and karbin) were investigated on 370 carp and guppies. In concentrations of 0.1-10.0 mg per liter of water, the herbicides were nontoxic throughout the duration of the experiment (3 months). The minimum toxic dose ranged from 0.5-10.0 mg/L. The minimum toxic dose caused the death of several fishes, preceded by general irritability and loss of body weight. In the group exposed to the lethal concentration of 5-50 mg/L, all fish died within 2.5 hours to 30 days. Death was preceded by general irritability, periodic clonus, lateral position, and dyspnea. Internal organs emitted a faint odor of the herbicides. It was concluded that the herbicides investigated should be classified as highly toxic compounds able to produce acute and chronic poisoning in fish.

1/1

USSR

UDC 616.833-001.29:616.71-089.844:616.833-063.93.

MARTYNYUK, P. G., Chair of Nervous Diseases, Ternopol' Medical
Institute

"The Effect of Marrow Transplantation on Post-traumatic Regeneration
of Peripheral Nerves in Acute Combined Radiation Trauma"

Kiev, Vrachebnoye Delo, No 1, 1970, pp 96-98

Abstract: Experiments were conducted to determine the effect of homologous bone-marrow transplants on the degeneration and regeneration of peripheral nerves under conditions of combined radiation trauma, depending on the periods of transplantation. A total of 170 rabbits, 60 of them donors and the remaining 110 divided into four groups were used. Group one consisted of 29 irradiated and nontreated animals, and the second, third, and fourth groups consisted of experimental irradiated rabbits. Irradiation was conducted at the rate of 25 rad minute. Within 40-45 min after irradiation, a neurotomy was performed, with a subsequent neurorrhaphy of the left sciatic nerve. Donor bone marrow was transplanted through a puncture of the medullary canal with needles used in spinal punctures. The effect of bone marrow transplantation was studied 24, 72, and 144 hours
1/2

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MARTYNYUK, P. G., et al., Kiev, Vrachebnoye Delo, No 1, 1970, pp 96-98

after irradiation. Of the 29 experimental animals, 21 perished during the first month after irradiation with symptoms of severe radiation sickness. In rabbits of the second, third, and fourth groups (animals given bone marrow transplants 24, 72, and 144 hours after combined trauma), radiation sickness symptoms were less pronounced and the mortality rate was considerably lower. Regeneration was relatively rapid, as indicated by rapid regeneration of bone marrow hematopoiesis and restoration of peripheral blood indices, the general reactivity of the animals, and the greater participation of repair processes in the restoration of the injured nerve. This was particularly true of the second group of animals, which received transplant 24 hours after irradiation. The regeneration-degeneration processes in this group were more pronounced than in the other series of experiments.

2/2

Acc. Nr.:

AP0032018

Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 76-77

SUMMARY
EFFECT OF BONE MARROW TRANSPLANTATION
ON POSTTRAUMATIC REGENERATION OF PERIPHERIC NERVES
IN ACUTE COMBINED RADIATION INJURY

Martynyuk, P. (Dnepropol)

Experiments were conducted on 110 rabbits in order to study the effect of homo-transplantation of fresh bone marrow on posttraumatic regeneration of peripheric nerves in acute radiation sickness. Transplantation of bone marrow was performed 24, 72 and 144 hours following operation and irradiation of 60 rabbits-donors of the similar breed and color.

Homotransplantation of bone marrow stimulated regenerative-degenerative processes of the lesioned peripheric nerves and the earlier the transplantation began the more marked was the stimulating effect.

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REEL/FRAZE

19700170

AAO036151

Martynov, V. P.
OR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/76

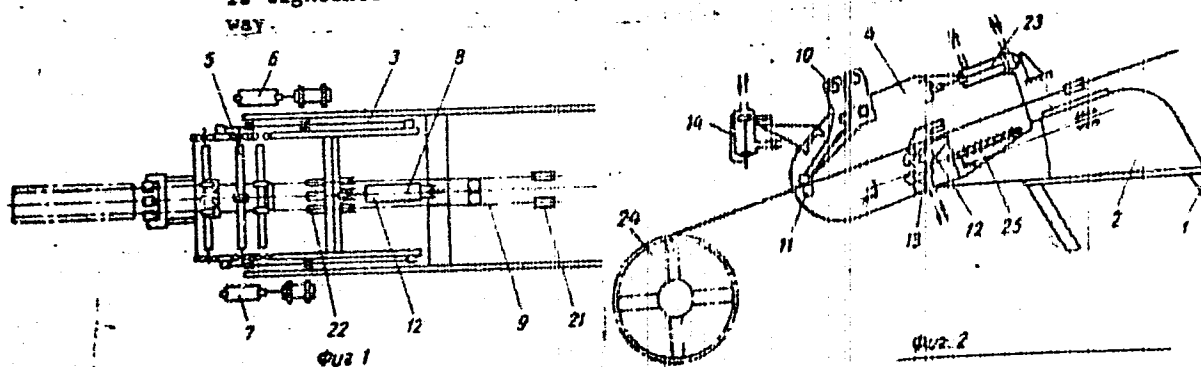
228263

CORD PLACER CARRIAGE used in tyre prodn.
(2) with guides and a moving part (4)
with bearings for two lead screws (5), right (6)
and left (7) drives for these, as used to place
the centre (8) and side (9) cord filaments. The
cord passes through the rollers (21) into the grips
(12) and placer rollers (22) and so out to the
moving part of the carriage. At a signal from the
assembly machine, the carriage part (4) advances,
feeds the cord to the rotating template (24) and
places it at given pitch, at the same time freeing
the cord from the grips which re-set. As the centre
and sides of the cord are freed, the drives start
their screws and the cord is spread, finally cut
after the required number of turns. Knives (16)
cut the cord, using the rams (17) on platform (26)
parallel to the cord filament. The grip returns

19720959

AA0036151

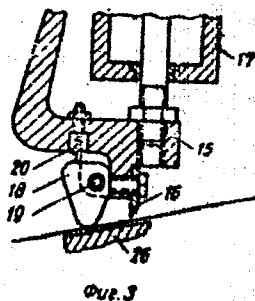
and draws the cord on until the cutting and then re-sets. The bar (15) and knives (16) lower so that the tab (18) contacts the platform and clamps the cord to it, for cutting. The cut end is drawn through between the tab and the platform, and rubber is tightened onto it and the end finished in this way.



2/3

19720960

AA0036151



13.12.62. as 807697/23-4,
MARTYNYUK, V.P. (24.6.69)
Bul. 8/12.2.69. Claus
39a⁶ Int. Cl. B 29h.

Let

2/13

19720961

USSR

UDC: 681.32.001

NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, Ya. V., ZLOGODNYKH, G. M.

"The Future of Utilizing Piezoelectric Elements in Computer Technology"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technology and Microelectronics. Republic Interdepartmental Collection), 1971, vyp. 6, pp 71-74 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B143)

Translation: The authors describe the principal types of piezoelectric elements which have been specifically designed for use in computer technology. Data are given on the basic parameters and field of application of analog piezoelectric elements. The possibilities of constructing high-capacity memory units with ferroelectric pulsed piezoelectric register elements are considered. The access time for readout from such a device is measured in fractions of a microsecond. Bibliography of six titles. N. F.

1/1

USSR

UDC 681.142.65

NEKRASOV, N. N., MANZHELO, V. A., MARTYNYUK, YA. V., ZLOGODUKH, G. N.

"Prospects for Using Piezoelements in Computer Engineering"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 71-74

Abstract: A study was made of the basic types of piezoelements the designs of which were especially developed for application in computer engineering. Data are presented on the basic parameters and range of application of analog piezo-elements. Special attention is given to the ferroelectric piezoelements designed for storing discrete information. The basic principles of constructing a memory of significant capacity using such elements are noted. The reference cycle when reading out of the described memories can be fractions of a micro-second. The length of the write cycle is on the order of a hundred micro-seconds, which permits application of relatively low writing voltages and simple write shapers. A write cycle frequency of several kilohertz is attainable. The memory circuit based on pulse elements is similar with respect to complexity to a magnetic memory with linear access.

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USSR

UDC 616.981-718.078.737

M
MARTYNYUK, Yu. V., EMDINA, I. A., TITOV, M. B., OBOLENSKAYA, G. I., KRUKIYER, M. D.,
SUPRUNOVICH, M. S., ZABNINA, S. G., and MOSKAL'CHUK, Z. A., L'vov Institute of
Epidemiology and Microbiology

"Specificity of the Complement Fixation Reaction in the Diagnosis of Q Fever"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp
55-59

Abstract: Study of the immunological structure of the L'vov population with respect to Q fever, using the complement fixation reaction with antigen from Rickettsia burnetii, revealed the highest number of positives (18-21%) among livestock handlers, meat plant workers, etc., as compared with 10.7% in the population at large. Serological examination of 429 hospitalized patients with cardiovascular, respiratory, liver, kidney, gastrointestinal, endocrine diseases, etc., 1730 febrile patients suffering from typhoid, influenza, meningoencephalitis, and other infectious diseases, and 158 cancer patients showed that about 12% had complement-fixing antibodies to the specific Q-fever antigen, or about the same rate as in the general population. There was no increase in the level of specific complement-fixing antibodies in any of the patients with diseases
1/2

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MARTYNYUK, Yu. V., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 4, 1970, pp 55-59

of non-Q-fever etiology. Even when the sera were stored for as long as 3-4
months (at 4°C) no nonspecific reactions were observed.

2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN DIAGNOSIS OF Q
FEVER -U-
AUTHOR--(05)--MARTYNYUK, YU.V., ENDINA, I.A., TITOV, M.B., DOLENSKAYA, G.I.,
KRUKIYER, M.D.
COUNTRY OF INFO--USSR M
SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4,
PP 55-59
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--Q FEVER, BLOOD SERUM, ANTIBODY, ANIMAL DISEASE THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1539

STEP NO--UR/0016/70/000/004/0055/0059

CIRC ACCESSION NO--AP0109599

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109599

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN EXAMINATION OF THE SERA OF 429 PATIENTS FROM THE THERAPEUTIC DEPARTMENTS, 1,730 PATIENTS WITH FEBRILE CONDITIONS OF VARIOUS ETIOLOGY, AS WELL AS OF 158 PATIENTS SUFFERING FROM CARCINOMA AND LYMPHOGRANULOMATOSIS. BESIDES, SERA PRESERVED FOR A PROLONGED PERIOD OF TIME WERE SUBJECTED TO EXAMINATION. THE RESULTS OBTAINED POINTED TO THE HIGH SPECIFICITY OF THE MENTIONED REACTION IN DIAGNOSIS OF Q FEVER. NOT IN A SINGLE CASE WAS THERE NOTED ANY ELEVATION OF SPECIFIC COMPLEMENT FIXATING ANTIBODIES IN DISEASE OF NON Q RICKETTSIAL ETIOLOGY, THE PERCENTAGE OF ANAMNESTIC REACTIONS REVEALED IN THE LATTER PATIENTS APPROACHED THAT OBTAINED IN STUDYING THE IMMUNOLOGICAL STRUCTURE OF THE HEALTHY POPULATION. NEVER WERE NONSPECIFIC RESULTS OBTAINED WHEN THE SERA WERE PROPERLY PRESERVED.

UNCLASSIFIED

USSR

Welding

UDC 621.791.754.019:546.74

MARTYSHIN, G. V., KHOROSHEVA, V. B., Moscow

"Some Peculiarities of the Welding of Thin-Sheet Structures of Dispersion-Hardened Nickel Alloy VZh101"

Kiev, Avtomaticheskaya Svarka, No 1, Jan 73, pp 16-20.

Abstract: The peculiarities of welding of VZh101 alloy related to the tendency of its joints toward thermal cracking are studied. It is recommended that parts be heated to 950-1,000°C for 5 hours before welding. After welding, joints should be heat treated as follows: hardening from 1,150°C, 1 hour, aging at 830-850°C, 16 hours, with cooling in air in both cases. If the welded joints cannot be hardened, they should be heated to 950°C for 5 hours. The use of EP533 wire produces welded joints more resistant to cracks, but with 10-15% lower strength. In case of cracking of welded joints during heat treatment, it should be performed in furnaces providing high heating rates (40-50°C/min) in the 750-950°C temperature interval.

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AA0047840

M

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241159 ROLLER BEARING contains an outer ring (1)
an inner ring (2), and rolling bodies (4)
situated between them. In order to reduce friction,
noise, and vibrations, as well as to enable
automatic regulation of pressure on the rolling
bodies, one of the rings has sockets (3) which
are made according to the form of the rolling
bodies, with throttling apertures (5) for the
delivery of a working medium under pressure to the
rolling bodies.

The sockets at the entrance of the rolling
bodies have a changing profile of cross-section.
The depth of the sockets exceeds one half of the
diameter of the rolling bodies.

The throttling apertures are interconnected
by a ring channel (6).

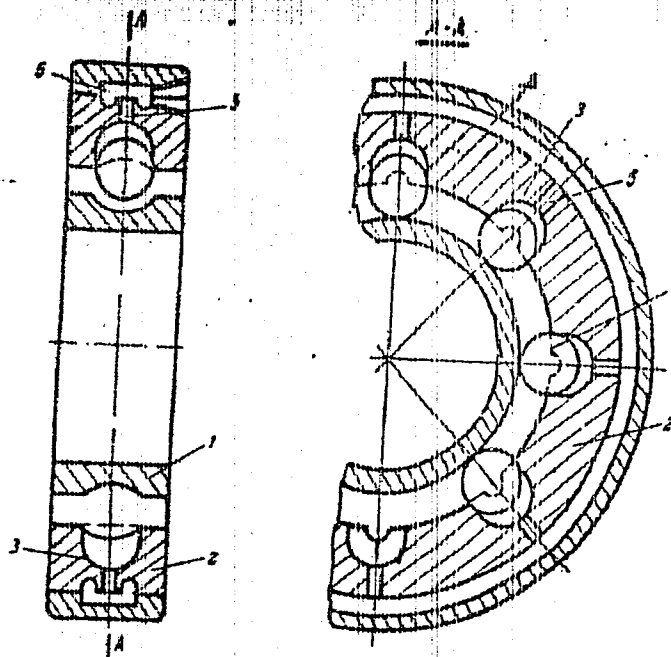
29.12.67. as 1206934/25-27, MARTYSHKIN, AYE,
(14.8.69) Bul. 13/1.4.69. Class 47b, Int. Cl.
F 16c.

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19791495

AA0047840



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19791496

2c

Acc. Nr.

AP0055939

Abstracting Service:
CHEMICAL ABST. 6/70

Ref. Code

440028

M

— 117257s Synthesis of hexa- ϵ -caprolactamcerium(III) isopolyhalides. Eremin, Yu. G.; Martynova, T. I. (Kalnin. Politekh. Inst., Kalinin, USSR). *Zh. Nedr. Khim.* 1970, 15(2), 350-3 (Russ). $Ce[I(I_2)]_3 \cdot 6L$ (I) and $Ce[Br(Br_2)]_3 \cdot 6L \cdot 16H_2O$ (II) formed when a corresponding Ce(III) halide was dissolved in satd. K halide soln. and 1st I or Br and then caprolactam (L) were added to these mixts. I is a brown powder, decomp. at 173°, sol. in alcs., esters, PhMe, xylene, CCl_4 , and hexane. II is a bright orange powd., m. 150°, evolving Br on a subsequent heating. Soly. of II is analogous to that of I. In mineral acids, II forms a thick red sirup. At 25°, elec. cond. of II in EtOH was $\sim 93.0-99.7 \text{ ohm}^{-1} \cdot \text{m}^2/\text{kilomole}$. The elec. cond. of I was 31.9-54.0, depending on diln. It is assumed that these halides are stabilized by the complex cation $[CeL_6]^{3+}$. HMJR

REEL/FRAME
19841268

R.N. 7

1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SYNTHESIS OF ANILINIUM POTASSIUM SULFATOCERATES -U-
AUTHOR--(02)-EREMIN, YU.G., MARTYSHOVA, T.I. M
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 638-42
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SYNTHESIS, METAL COMPLEX COMPOUND, POTASSIUM
COMPOUND, CESIUM COMPOUND, SULFATE, ANILINE, ORGANIC COMPLEX COMPOUND,
SELENIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1885

STEP NO--UR/0078/70/015/003/0638/0642

CIRC ACCESSION NO--AP0115704

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 013

CIRC ACCESSION NO--AP0115704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPODS. WERE PREPD. IN H
SUB2 SO SUB4, HNO SUB3, AND HCL SYSTEMS. COMPODS. OF DIFFERENT COMPN.
WERE OBTAINED DEPENDING ON THE STARTING CONC. RATIO OF CE PRIME4
POSITIVE K PRIME POSITIVE PHNH SUB3 PRIME POSITIVE. IN GENERAL, (PHNH
SUB3) SUBX K SUB3-X CE (SO SUB4) SUB3 FORMED IN HNO SUB3 OR H SUB2 SO
SUB4 AND (PHNH SUB3) SUBX K SUB5-X SE(SO SUB4) SUB4 FORMED IN HCL SOLNS.
THE COMPODS. HAD LOW SOLY. PHNH SUB3 PRIME POSITIVE HAS A DUAL ROLE IN
THESE REACTIONS. IN HCL IT FORMED AN INSOL. COMPD. AND SEPD.
IMMEDIATELY AFTER MIXING OF REAGENTS AND IN HNO SUB3 OR H SUB2 SO SUB4
IT REDUCED CE PRIME4 POSITIVE TO CE PRIME3 POSITIVE BEFORE PPTN. IT
APPEARS THAT PHNH SUB3 PRIME POSITIVE HAS A STRONG SALTING OUT EFFECT
AND ACCELERATES PPTN. OF DOUBLE SULFATE SALTS OF CE AND K.
FACILITY: KALANIN. POLITEKH. INST., KALININ, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EMISSION SPECTRUM AND LONGITUDINAL MODE SELECTION IN A LASER WITH
ELECTROOPTICAL Q SWITCHING -U-
AUTHOR-(04)-GENKIN, R.O., ISYANOVA, YE.D., MARUGIN, A.M., OVCHINNIKOV,
V.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, FEB. 1970, P. 227-230
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--RUBY LASER, EMISSION SPECTRUM, SINGLE MODE LASER, LASER Q
SWITCHING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0915 STEP NO--UR/0368/70/012/000/0227/0230
CIRC ACCESSION NO--AP0107444
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107444
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DESCRIPTION OF AN OPTICAL
ARRANGEMENT FOR NARROWING TO ONE LONGITUDINAL MODE THE EMISSION SPECTRUM
OF AN ELECTROOPTICALLY Q SWITCHED RUBY LASER, USING A SPECIAL
POLARIZATION ELEMENT WHICH SPLITS THE LASER RESONATOR INTO TWO CHANNELS.
ONE EMISSION LINE WAS OBTAINED WITH A SPECTRAL WIDTH OF NOT MORE THAN
150 MHZ; EMISSION SPECTRA ARE ILLUSTRATED FOR BOTH CHANNELS SEPARATELY
AND TOGETHER.

UNCLASSIFIED

UDC 576.856

USSR

MARUKYAN, M. Kh., Republic Veterinary Laboratory, Ministry of Agriculture,
Armenian SSR

"The Retention Period of Virulent Properties and the Resistance to Streptomycin of *Leptospira pomona* and *Leptospira grippotyphosa* Acquired in Vitro"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 10, 1971, pp 94-96

Abstract: Virulent properties and resistance to streptomycin acquired in vitro in a medium containing streptomycin were studied in *L. pomona* and *L. grippotyphosa*. Two streptomycin-resistant strains of *Leptospira* multiplied exceptionally well on media containing 25, 50, 75, 100, and 125 units streptomycin/ml., while the initial control strains grew only on media without the streptomycin. Virulent properties of these strains cultured in media without streptomycin were tested on rabbits infected with *Leptospira* cultures after 8, 9, 21, 35, 45, 60, and 70 passages. All animals perished within 6-9 days. Thus, the streptomycin-resistant strains of *Leptospira* cultured for 34 months in media without streptomycin were virulent for all rabbits. The acquired resistance to streptomycin was transferred from one generation to another. No reversion of the inherent characteristics was observed during 3 years of culturing of these two strains in media without the streptomycin.

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USSR

MARUKYAN, M. Kh., Biologicheskii Zhurnal Armenii, Vol 24, No 10, 1971, pp 94-96

Apparently the heredity apparatus of the bacterial cells is of importance in addition to mutagenic properties of the streptomycin.

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- 34 -

USSR

UDC 576.856

MARUKYAN, M. KH., Republic Veterinary Laboratory, Ministry of Agriculture
~~Armenian SSR~~

"Cultivation of Leptospira in a Medium with Preserved Serum"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 24, No 11, 1971, pp 113-114

Abstract: Growth of 22 Leptospira strains of 12 different serotypes was investigated in a medium containing preserved sheep blood serum. All strains proliferated well without addition of growth stimulants, and no contamination of the medium with other microorganisms occurred. The serum is prepared by separating it from clotted sheep blood (obtained from a slaughterhouse), adding a 2% chloroform solution, stirring the mixture, and inactivating it in a water bath at 56°C for 1 hour. This serum keeps well for at least 3 months if it is stored at 10-12°C. The culture medium is prepared according to Terskiye, except that the fresh rabbit serum is replaced with the preserved sheep serum. The medium is heated three times on 3 successive days in a water bath at 58-60°C for 1 hour each time, after which it is ready for use.

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UNCLASSIFIED
I/2 024
TITLE--ANODIC BEHAVIOR OF STAINLESS STEEL KH18NIOT -U-
AUTHOR--(05)-MALTSEV, V.F., SHAVEL, M.H., MARUNENKO, L.V., GAMALI, T.A.,
SMIRNOVA, N.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 140-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--STAINLESS STEEL, STAINLESS STEEL COMPOSITION, MANGANESE STEEL,
SILICON STEEL, CHROMIUM STEEL, NICKEL STEEL, TITANIUM STEEL,
ELECTROLYTE, CHLORIDE, THIOUREA, SOLUBILITY/(U)KH18NIOT STAINLESS STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0601
STEP NO--UR/0032/70/036/002/0140/0143
ACCESSION NO--AP0107198
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0107198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POTENTIAL TIME PLOTS ARE GIVEN FOR STAINLESS STEEL KH18NIOT CONTG. C 0.082, MN 1.17, SI 0.58, CR 17.5, NI 10.8, AND TI 0.33PERCENT DURING ITS ANODIC DISSOLN. IN DIFFERENCE ELECTROLYTES. CONST. PASSIVATION AND IRREGULARITIES IN LOCAL DISSOLN. OF THE STEEL WERE OBSERVED IN 0.2N CCL SUB3 CO SUB2 H, 0.2N ACNH, 0.2N GLYCINE, OR 0.005N H SUB2 SO SUB4. SMOOTH ANODIC DISSOLN., GOOD ISOLATION OF THE CARBIDES, AND ELIMINATION OF PASSIVATION WERE ACHIEVED IN THE MIXED ELECTROLYTE CONTG. M KCL, 0.24M HCL, 10 G THIOUREA-L., AND 0.2N CARBOXYLIC ACID. ADDNS. OF CHLORIDES AND OF THIOUREA ALSO IMPROVE THE ANODIC DISSOLN. IN DIL. H SUB2 SO SUB4 OR H SUB3 PO SUB4.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--20NDV70
TITLE--DIFFUSION OF INDIUM AND ANTIMONY IN GERMANIUM IRRADIATED BY LOW
ENERGY ELECTRONS -U-
AUTHOR--(04)-DUDKO, G.V., ~~NARUNINA, N.I.~~ SUKHCV, G.V., CHEREDNICHENKO,
D.I. M
CCOUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1292-4
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL DIFFUSION, ANTIMONY ALLOY, GERMANIUM ALLOY, INDIUM
ALLOY, CRYSTAL DISLOCATION, RADIOACTIVE ISOTOPE, ELECTRON, LOW ENERGY
NEUTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0476

STEP NO--UR/0181/70/012/004/1292/1294

CIRC ACCESSION NO--AP0126228

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126228

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE DIFFUSION OF IN AND SB IN GE ORIENTED IN THE (111) PLANE AND TREATED OVER THE ENTIRE SURFACE WITH LOW ENERGY ELECTRONS (SMALLER THAN 30 KEV) WAS STUDIED AT 650-850 DEGREES USING RADIOACTIVE ISOTOPES. THE DIFFUSION PARAMETERS ARE $D_{\text{SUBO}} = 5.8 \times 10^{-13} \text{ CM}^2 \text{ SEC}^{-1}$, $Q = 57 \text{ KCAL-MOLE FOR IN}$ AND $D_{\text{SUBO}} = 2.1 \times 10^{-13} \text{ CM}^2 \text{ SEC}^{-1}$ AND $Q = 48 \text{ KCAL-MOLE FOR SB}$. ACCELERATED DIFFUSION IS RELATED APPARENTLY TO THE FORMATION OF A NETWORK OF DISLOCATIONS BY IRRADN. FACILITY: TAGANROG. RADIOTEKH. INST., TAGANROG, USSR.

UNCLASSIFIED

USSR

UDC 621.359.7:661.528(088.8)

BIBIKOVA, V. I., MARUNOVA, K. V., and STEPANOVA, M. A.

"Process for the Preparation of Ammonia Perrhenates"

Goc. n.-i i proekt. in-t redkometal. prom-ste (State Scientific and Design Institute for Rare Metal Industry), USSR Author's Certificate EL [expansion unknown] C 01 g 47/00, B 01 d 13/02, No 346230, applied 8/06/70, published 22/08/73 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L321P by N. Sh.)

Translation: Ammonium perrhenates were prepared by the electrodialysis of aqueous solutions of rhenium, for example potassium perrhenate. To strengthen and simplify the process, and also to increase the purity of the final product the electrolysis was performed using an ion exchange membrane at a current density of $\geq 4 \text{ ma/cm}^2$ at a temperature of 50-70°C. For example, an aqueous solution of potassium perrhenate, prepared from the dry salt was electrolyzed in an electrolyser using ion exchange membranes at a temperature of 62°C and a membrane surface current of 6 ma/cm² (space surface current was 2.7 a/d; the anodic chamber was filled with a 1 M solution of NH₄OH) for 5 hours. Upon cooling, crystals of the final products precipitated from the osolite obtained above a yield of 1/2 g. of the product, containing 69.42% rhenium, was recovered. This represented a recovery of 94% of the theoretical yield.

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1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INFRARED SPECTROSCOPIC STUDY OF THE HYDROGEN BONDING OF SOME
CARBINOLS -U-
AUTHOR--(04)--USMANOV, A., KOZHUKHOVA, A.N., MARUDOV, R., KALONTAROV, I.YA.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(3), 31-4
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--IR SPECTRUM, HYDROGEN BONDING, HYDROXYL RADICAL, HETEROCYCLIC
NITROGEN COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1086 STEP NO--UR/0425/70/013/003/0031/0034
CIRC ACCESSION NO--AT0124743

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0124743
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA (3000-3800 CM PRIME
NEGATIVE) OF I (AS SOLID AND 1 AND 2PERCENT SOLNS. IN CCL SUB4) AND H
SUB2 C:CHC TRIPLE BOND CCME SUB2 OH (AS LIQ. AND 0.5, 1, 2, AND 5PERCENT
SOLNS. IN CCL SUB4) INDICATE THE ABSENCE OF INTRAMOL. H BONDS. A BAND
AT 3600 CM PRIME NEGATIVE WAS ASCRIBED TO FREE OH GROUPS.
FACILITY: FIZ.-TEKH. INST. IM. UMAROVA, DUSHANBE, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--NEURONAL ACTIVITY IN THE COLLICULUS INFERIOR OF KITTENS TO SOUND
SIGNALS AT VARIOUS AGES -U-
AUTHOR--(02)-MARUSEVA, A.M., MALYSHEVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 2,
PP 225-234
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHITE NOISE, CAT, NEURON, BIOPOTENTIAL, AUDITORY SYSTEM,
MEDICAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/2022

STEP NO--UR/0385/70/006/002/0225/0234

CIRC ACCESSION NO--AP0105094

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0105094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPULSE ACTIVITY OF SINGLE UNITS OF THE COLLICULUS INFERIOR HAS BEEN EVOKED BY SOUND PULSES (TONES AND WHITE NOISES) OF VARYING INTENSITY AND DURATION. NEURONAL RESPONSES TO SOUND STIMULI WERE OBSERVED FROM THE 9 TO 10TH DAY OF POSTNATAL LIFE. THE SPIKE ACTIVITY OF THE NEURONS AT THIS PERIOD IS CHARACTERIZED BY LONG LATENT PERIOD, HIGH THRESHOLD AND LOW RATE OF DISCHARGE. SOME OF THE NEURONS EXHIBIT NONMONOTONOUS DEPENDENCE OF THE DISCHARGE PATTERN ON SIGNAL INTENSITY. THIS FACT INDICATES THAT INHIBITORY INFLUENCES MAY BE OBSERVED IN THE AUDITORY SYSTEM FROM THE MOMENT OF THE ONSET OF NEURONAL RESPONSES TO SOUND STIMULATION.

UNCLASSIFIED

USSR

UDC 519.2

MARUSHIN, M. M.

"Poisson's Law Limit Theorem of order $p > 0$ for Sums of m -Dependent Random Variables"

Dopovidi AN URSR (Reports of the Ukrainian SSR Academy of Sciences), 1972, A, No 9, pp 800-804, 860 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V12V19)

Translation: Let $S_{nk} = \sum_{i=1}^k X_{ni}$ be the sum of m -dependent random variables, and let $L(S_{nk})$ be the probability distribution law of the sum S_{nk} . Let us stipulate that the Poisson law limit theorem of order p is applicable to the sum S_{nk} where p is a natural number if the following two equalities are observed simultaneously:

$$\lim_{n \rightarrow \infty} L(S_{nk}) = P(\lambda), \quad \lim_{n \rightarrow \infty} M(S_{nk}^p) = e^{-\lambda} \sum_{l=1}^{\infty} \frac{(p\lambda)^l}{l!},$$

where $P(\lambda)$ is Poisson's law. The conditions of applicability of the Poisson law limit theorem of order p to the sum of m -dependent random variables are presented.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF GAS TEMPERATURE ON THE EFFECTIVENESS OF EXCITATION
TRANSFER IN HELIUM -U-
AUTHOR-(02)-BOGDANOVA, I.P., MARUSIN, V.D.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(4), 645-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HELIUM, EXCITATION ENERGY, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1740 STEP NO--UR/0051/70/028/004/0645/0649
CIRC ACCESSION NO--AP0118718
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118718

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT A PRESSURE OF 8 TIMES 10 PRIME
NEGATIVE3-4 TIMES 10 PRIME NEGATIVE2 TORR WAS EXCITED BY THE IMPULSE
ELECTRONIC BEAM. VARIATION WAS OBSD. OF FORM OF THE OPTICAL FUNCTIONS
OF EXCITATION OF THE SPECTRAL LINES OF HE FROM THE LEVELS 3 PRIME3 D
(LAMBDA EQUALS 587.6 NM) AND 4 PRIME3 D (LAMBDA EQUALS 447.1 NM)
MEASURED IN THE REAR AND FRONT OF A RECTANGULAR IMPULSE OF ELECTRONIC
CURRENT OF 1 MUSEC DURATION. THIS VARIATION OF THE FORM IS DETD. BY THE
TRANSFER OF THE EXCITATION FROM OTHER LEVELS OF HE ONTO THE STUDIED
LEVELS. THE MEASUREMENTS SHOW DURATION OF THIS ADDNL. EXCITATION OF THE
LEVELS 3 PRIME3 D AND 4 PRIME3 D LARGER BY AN ORDER OF MAGNITUDE THAN
THEIR RADIATION LIFETIME. INVESTIGATION WAS CARRIED OUT OF THE TEMP.
EFFECT OF THE GAS ON THE MAGNITUDE OF THE EFFECTIVENESS OF TRANSFER OF
THE EXCITATION IN THE TEMP. INTERVAL 120-580DEGREE\$K. AS THE TEMP. OF
THE GAS VARIES 300-580DEGREE\$K THE MAGNITUDE OF THE EFFECTIVENESS OF THE
TRANSFER WITHIN EXPTL. ERRORS REMAINS UNCHANGED AND AT THE TEMP. OF
120DEGREE\$K INCREASES 1.4 FOLD.

UNCLASSIFIED

Acc. Nr.

AP 0032815

Abstracting Service:

CHEMICAL ABST. 3-70

Ref. Code

21R0051

M

59357m Determination of an effective excitation cross section of the 2^1S metastable state of helium. Borjanova, I. P.; Marusin, V. D. (USSR). *Opt. Spectrosc.* 1970, 25(5), 121-7. (Russian) A mixture of the He and 50% Ne at $P = 10^{-3}$ torr was excited by an electron beam of 20-100 eV energy and 300-600 μ A current. By using the phenomenon of resonant energy transfer from the 2^1S state of He to higher excited states of Ne, the form of the excitation function of meta-stable He levels was studied. The abs. value of the effective excitation cross-section of this state for 45 eV electrons was 1.3×10^{-18} cm².

Ved Prakash Gupta

[Signature]

REEL/FRAME

USSR

UDC: 539.5

MARUSIY, O. I., ZASIMCHUK, Ye. E., Kiev

"Study of the Processes of Softening During Creep of Molybdenum and its Alloys"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 34-37.

Abstract: Structural changes during creep of technical molybdenum, annealed before testing at temperatures over 1200° C, and its alloys with titanium and zirconium are studied. It is established that the acceleration of deformation (onset of the third stage of creep) is related to recrystallization of local areas of the material tested. Recrystallization is stimulated during the process of creep by deformation and is not related to the initial structure of the molybdenum and its alloys. The mechanism of formation of recrystallization zones in the materials with developed substructure is studied. 5 figures, 10 biblio. refs.

1/1

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USSR

UDC: 620.172.226

Kovpak, V. I., Marusiy, O. I., Kiev

"Equivalent Damage Rates During Long-term Strength Testing"

Kiev, Problemy Prochnosty, No 4, Apr 72, pp 38-45.

Abstract: It is suggested that the characteristics of heat resistance at various temperature levels in inclined cross-sections consisting of straight rays leaving a common point (pole) be compared. The points of intersection of the rays with the long-term strength diagrams for various temperatures determine the values of stresses and times to rupture, between which there is a certain correlation, based on the conditions of equivalence of damage rates. Methods are shown for determination of the conditions of equivalent damage rates by experiment and by analysis of primary long-term strength diagrams. Metallographic investigation of specimens ruptured at two temperature levels under conditions of equivalent damage rate are performed.

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USSR

UDC 621.398.93

SHCHERBAN', A. N., FURMAN, N. I., PRIMAK, A. V., KOPEL'KIN, V. I.,
POKARZHEVSKIY, A. S., MARUSOV, A. G., DASHEVSKIY, L. N., and KHOMYAKOV, A. T.,
Institute of Technical Heat Physics, Acad. Sc. Ukr SSR, Gas Institute, Acad.
Sc. UkrSSR

"Telemetric System for Sanitation-Chemical Control of Air Pollution"

Kiev, Khimicheskaya Tekhnologiya, No 3, (63), May-Jun 72, pp 49-52

Abstract: A complex system is discussed designed to fulfill the following functions: organization of the input operations of the informations from control-determination points (CDP) into the computer memory with wide range of possible changes in the frequency and order of query to CDP; determination of the measurement points with higher pollution and increased frequency of queering the respective recorder; statistical treatment of the information, tabulation or graphing of the results; and analysis of the effectiveness of the utilization of purifying equipment by the change in air pollution in a controlled region.

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1/2 031 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--INDOLE DERIVATIVES. LXI. SYNTHESIS OF 4(5),(3,INDOLYL)IMIDAZOLE -U-
AUTHOR--(04)-SUKVOROV, N.N., SMUSHKEVICH, YU.I., MARVANDYSKAYA, N.N.,
SULIMA, A.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. FARM. ZH. 1970, 4(2), 10-12
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL SYNTHESIS, IMIDAZOLE, INDOLE DERIVATIVE, NUCLEAR
MAGNETIC RESONANCE, UV SPECTRUM, IR SPECTRUM, MASS SPECTROSCOPY,
MOLECULAR STRUCTURE, MERCAPTAN, BENZENE DERIVATIVE, AROMATIC KETONE,
BACTERICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0530

STEP NO--UR/0450/70/004/002/0010/0012

CIRC ACCESSION NO--AP0113421

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--09OCT70
 CIRC ACCESSION NO--AP0113421
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 8 G I AND 180 ML HCONH
 SUB2 IS HEATED 1 HR AT 186DEGREES (BATH TEMP.) TO GIVE 50PERCENT II.H
 SUB2 O, M. 74-6DEGREES (H SUB2 O); ANHYD. II, M. 159-9DEGREES, IS
 OBTAINED BY DRYING OVER P SUB2 O SUB5 SEVERAL DAYS IN VACUO; II PICRATE
 M. 241-2DEGREES (ETOH); II ADIPATE M. 159-60DEGREES (ETOH). THE II
 STRUCTURE IS CONFIRMED BY ELEMENTARY ANAL., NMR, IR, AND MASS SPECTRA,
 AND ALSO BY THE FOLLOWING SYNTHESIS. A SOLN. OF 0.5 G III IN ETOH WITH
 1 G SKELETAL NI IS REFLUXED 1 HR WITH STIRRING TO GIVE 81PERCENT II.H
 SUB2 O. IV.HCL (5 G) AND 22 G KSCN IS HEATED AT 210DEGREES (BATH TEMP.)
 1 HR WITH STIRRING TO GIVE 16PERCENT III, M. 241-30DEGREES (AQ. ME SUB2
 CO). THE UV SPECTRA OF II AND III ARE MEASURED IN 95PERCENT ETOH. THE
 BIOL. ACTIVITY OF II IS TESTED. FACILITY: MOSK. KHIM. TEKHNOL.
 INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

UDC 620.178.16:669.973

USSR

PRESNYAKOVA, G. N., LYUBARSKIY, I. M., UDOVENKO, V. F., MAR'YAK-HINA, YE. I., CHERNYAK, S. S., Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR

"Friction and Wear at Low Temperatures"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 9-12

Abstract: The friction and wear of G13L steel with respect to 40Kh steel were investigated in a high vacuum ($5 \cdot 10^{-7}$ mm Hg) and in air at room temperature and at -190°C . Low-temperature vacuum manipulators made it possible to cool the samples to cryogenic temperatures, create normal loading, and transmit data to a measuring system outside the chamber. It was found that in the presence of friction in air and in a vacuum, low temperatures had no effect on wear for the indenters (steel G13L). For a ring (steel 40Kh), lowering the temperature in the atmosphere does not change the wear, but lowering the temperature with friction in a vacuum increases the wear sharply. The friction coefficient increases on lowering the test temperature in a vacuum; when testing in air, it is less than in a vacuum and is

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USSR

PRESNYAKOVA, G. N., et al., Metallovedeniye i Termicheskaya
Obrabotka Metallov, No 3, 1971, pp 9-12

independent of the temperature. The surface layer was strained
in the presence of friction more intensely in a vacuum than in
air.

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- 46 -

USSR

UDC 620.178.16:669.973

PRESNYAKOVA, G. N., LYUBARSKIY, I. M., UDOVENKO, V. F., MAR'YAK-HINA, YE. I., CHERNYAK, S. S., Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian SSR

"Friction and Wear at Low Temperatures"

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USSR

PRESNYAKOVA, G. N., et al., Metallovedeniye i Termicheskaya
Obrabotka Metallov, No 3, 1971, pp 9-12

independent of the temperature. The surface layer was strained
in the presence of friction more intensely in a vacuum than in
air.

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AN0033119

UR4025

FROM: FBIS Daily Report, Soviet Union, 3 March 1970, Vol. VII, Nr 42, p E 7
SOVIET FORCES COMBINE NUCLEAR, CONVENTIONAL ARMS

USSR

Moscow TRUD 22 Feb 70 p 1 L

[Article by USSR Deputy Defense Minister, Army Gen S.S. Matyashkin: "The Invincible and Legendary"]

[Excerpt] Our army has changed strikingly in the quarter of a century that has elapsed since the war. It has been radically reorganized, rearmed, and reequipped. At the moment chief attention is being devoted to a judicious combination of the further development of nuclear missile weapons and the improvement of traditional "classic" types of arms and the ability of units and subunits to operate efficiently, both using nuclear weapons and without them.

All types of armed forces are developing and improving annually in organic unity and intercommunication. Every year the Strategic Missile Forces become not only more effective in terms of the power of the nuclear charge and accuracy of aim but also in terms of a readiness to deal an answering blow. At any moment they can deal a blow to the aggressor, wherever he is hiding. Whoever was at the 7 November 1969 parade on Red Square saw various powerful, maneuverable solid-fuel and three-stage intercontinental missiles.

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The new improved equipment has made it possible to increase considerably the maneuverability and mobility of the ground forces and widely introduce and increase the firepower of operational and tactical missiles. The airborne forces, of course, are still the most mobile form of ground forces. They are capable of waging independent battles for long periods deep in the enemy's rear.

The country's air defense forces have achieved new successes in preparing for the struggle both against piloted and unmanned means of attack from the air. Automated control systems in conjunction with powerful radar and air defense complexes and all-weather interceptor fighters make the air defense forces a highly reliable shield for our motherland against attack from the air.

When speaking of the navy, you see before you, above all, powerful nuclear missile submarines, whose automatic navigation is limitless. In comparison with submarines of the prewar period under power supply has increased almost a hundred fold, their diving depth more than fivefold, and submarine speed three-to fourfold. They are capable of launching missiles from any position thousands of kilometers from the target. A good supplement to submarines are the fast-moving and heavily armed multipurpose surface vessels of various classes.

19701525

USSR

GUSEV, V. V., MAR'YANOVICH, T. P., SAKHNYUK, M. A.

"Program Modeling of Complex Systems"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 19-26 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V739, by the authors).

Translation: The essence and certain methodological problems of investigation of complex systems on computers by the use of modeling languages and programming systems based on them are discussed in readable form.

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UDSR

UDC: 615.31:547.753/.012.1:542.9

SUVOROV, N.N., SMUSHKEVICH, YU.I., MAR'YANOVSKAYA, N.N., SULINA, A.V., Moscow
Institute of Chemical Technology imeni D.I. Mendeleev, Moscow, Ministry of Higher
and Secondary Specialized Education RSFSR

"Derivatives of Indole. LXI. Synthesis of 4(5)-(Indolyl-3)-Imidazole"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 2, Feb 70, pp 10-12

Abstract: Continuing studies on the synthesis of indolylazoles, the authors prepared 4(5)-(indolyl-3)-imidazole (II) and studied its biological activity. The formamide method, consisting of the reaction of alpha-substituted ketones or alpha-diketones with formamide, was used to prepare (II) from 3-chloroacetylindole. The structure of (II) was confirmed by elemental analysis and special methods (paramagnetic resonance and infrared and mass spectra) and also by reverse synthesis. In the infrared spectrum of (II) absorption bands were observed at 3400 cm⁻¹ (NH of indole ring) and at 3200-3100 cm⁻¹ (NH of imidazole ring). 2-Mercapto-4(5)-(indolyl-3)-imidazole was also prepared by the reaction of the chloroanhydride of 3-aminoacetylindole with potassium thiocyanate. The biological activity of (II) was studied at the All Union Scientific Research Chemico Pharmaceutical Institute imeni S. Ordzhonikidze. Under laboratory biocontrol during investigation of antiinflammatory action by Doctor of Biological Sciences S.S. LIBERMAN, it was established that (II) decreases the weight of granuloma; however, in activity it

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USSR

SUVOROV, N.N., et al, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 2, Feb 70, pp 10-12

is inferior to phenylbutazone. Results of tests conducted in the chemico-therapy branch by Senior Scientific Worker T.N. ZYKOVA under the direction of Corresponding Member of the Academy of Medical Sciences USSR G.N. PERSHIN showed that the product also possesses bacteriological activity in relation to mycobacteria of tuberculosis (strain H37Rv). However, it inhibited the growth of tubercular bacillus only in a concentration of 250 mgm/ml.

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USSR

UDC 539.4.015

GUREVICH, S. YE., MAR'YANOVSKAYA, T. S., and FRIDMAN, Z. G., Moscow

"The Use of Rupture Viscosity Date in Predicting the Effectiveness of Increasing Heat Resistance in Thermoplastic Strengthening"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 142-144

Abstract: In order to establish the possibility of using plastic deformation (ϵ_k) for evaluating the maximal stress-rupture strength, the rupture viscosity (K_{1C}^Q) and the stress-rupture strength of 1Kh18Ni2Ti steel were determined after the mechanical thermal treatment (MTT) in 100, 1000, and 10,000 hours. Deformation of this steel during MTT was accomplished at 200°C after which it was subjected to polygonization annealing at 600°C for 100 hours. The stress-rupture test was carried out at 600°C. The results indicated that the value of K_{1C}^Q gradually increases with increasing plastic deformation until it reached a certain critical deformation (ϵ_k) corresponding to 11%. At this point changes in K_{1C}^Q took place. In every instance the stress-rupture strength increased with increasing deformation extent produced by MTT. Its maximum values were reached at deformation equaling the ϵ_k . When deformation exceeded the critical limit, the stress-rupture strength decreased in the course of testing for 1000 and 10,000 hours.

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USSR

UDC: 539.385

GUREVICH, S. YE. and MAR'YANOVSKAYA, T. S., Institute of Metallurgy
imeni A. A. Baykov, Academy of Sciences USSR

"Determining the Optimal Cyclic Strength of Metals on the
Basis of Damageability During Mechanochemical Treatment"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 86-97

Translation: A study was made of the crack propagation
resistance (K_{Ic}) of 1Kh18N9T steel as a function of deformation
ratio and temperature (ϵ) under conditions of mechanochemical
treatment (MTT) as well as of testing temperatures. The
pattern of changes in K_{Ic} relative to deformation ratio was
used as a basis to determine the critical deformation ratio
 ϵ_{cr} as the deformation conforming to the inflection of straight
lines between $K_{Ic} - \epsilon$ (governed by the growth rate of K_{Ic}) and
the appearance of the variability zone. Correlation of
deformation values of reversible damage corresponding to the
formation of submicroscopic cracks ϵ_{cr}^s and ϵ_{cr}^k at the same defor-

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USSR

GUREVICH, S. Ye. et al, "Determining the Optimal Cyclic Strength of Metals on the Basis of Damageability During Mechanochemical Treatment", Sb. "Ustalost' metallov i splavov", 1971, pp 86-97

mation temperatures indicates that ϵ_k^* is the minimal deformation of reversible damage while ϵ_k^* is the minimal deformation of irreversible damage. Depending on the specific forming conditions $\epsilon_k^* = \epsilon_k^*$ or $\epsilon_k^* < \epsilon_k^*$. The critical deformation ratio ϵ_k^* depends only on MTT temperatures and is independent of the testing temperature. As the MTT temperature is increased, ϵ_k^* decreases. A definite correlation between the maximum fatigue limit values and the critical deformation ratio ϵ_k^* has been established. Hence this criterion permits determination of optimal MTT deformation conditions in terms of increasing the cyclic strength of the metal. The effect of increasing the cyclic strength through MTT is governed primarily by the deformation ratio and testing temperature. (7 illustrations, 16 bibliographic references; summary)

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USSR

UDC: 681.327

TERYAYEV, V. A., SHESTAKOV, I. B., PEREPLETCHIKOV, G. N., MARKOVSKIY, V. N.,
IVASHKIN, G. P., MAR'YANOVSKIY, M. M.

"Method of Manufacturing Thin-Film Magnetic Matrices"

USSR Authors' Certificate No 251713, Filed 2 April 1968, Published 10 February 1970 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, 1970, Abstract No 10B161P, by N. V.)

Translation: A method is suggested for manufacturing thin-film magnetic matrices differing from known methods in that in order to decrease the ohmic resistance of the control lines and retain the magnetic properties of the matrix, the conducting layers are produced by gluing down foil using organic varnishes (glues) as the matrices are heated in the presence of a magnetic field in the plane of the substrate. One illustration.

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--IMIDAZOLE DERIVATIVES CONTAINING POTENTIALLY LABILE GROUPS AT THE N
ATOMS. IV. NEW METHOD FOR OBTAINING 1,6-DISUBSTITUTED BENZIMIDAZOLE -G-
AUTHOR--MARYANOVSKIY, V.M., POZHARSKIY, A.F., SIMONOV, A.M.

COUNTRY OF INFO--USSR M

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 216-18

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZIMIDAZOLE, AMINE DERIVATIVE, ALKYLATION, ORGANIC NITRO
COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1801

STEP NO--UR/0409/70/000/002/0216/0218

CIRC ACCESSION NO--AP0100375

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUATERNIZATION OF 5-ALKYL AND 5-ALKOXY DERIVS. OF 1-BENZIMIDAZOLE (I) TAKES PLACE IN TOLUENE, BUT THE REACTION INVOLVING 5-AMINO DERIVS. IS CARRIED OUT IN ACETONE. DEBENZYLATION WITH NA IN LIQ. NH SUB3 YIELDS UP TO 80PERCENT 6,ALKYL OR 6,ALKOXY,1,BENZIMIDAZOLE. REACTION WITH NA-HG GIVES POORER YIELDS AND THE METHOD CANNOT BE USED FOR THY SYNTHESIS OF 6-BR AND 6-NITRO DERIVS. BENZIMIDAZOLINIUM SALTS WERE PREPD. FROM 5-SUBSTITUTED I (5-SUBSTITUENT, ALKYL HALIDE, AND M.P. GIVEN): -, ETI, 173-4DEGREES; MEI, ETI, 173-4DEGREES; MEQ, ETBR, 172-3DEGREES; MEQ, ETI, 151-2DEGREES; MEQ, MEI, 240-1DEGREES, NH SUB2, MEI, 166-7DEGREES; NO, ETI, 169-9.5DEGREES; BR, ETI, 201-2DEGREES. DECOMP. OF THE SALTS WITH NA GAVE BENZIMIDAZOLES (SUBSTITUENTS, PERCENT YIELD, M.P., B.P., AND M.P. PICRATE GIVEN): 1,ME,6,MEQ, 60, 66-7DEGREES, 185-90DEGREES-15 MM, MINUS; 1,ET,6,MEQ, 62, MINUS, 180-85DEGREES-13 MM OR 162-7DEGREES-9 MM, 215-16DEGREES; 1,ET,6,ME, 53, MINUS, 205-10DEGREES-2, 256-7DEGREES; 1,ME,6,NH SUB2, 70, MINUS, 180-85DEGREES-4 MM, 225-7DEGREES. THE 5-AMINO DERIV. OF I M. 155-6DEGREES WAS PREPD. IN 67PERCENT YIELD FROM THE CORRESPONDING NITRO COMPD. BY REDN. WITH SNCL SUB2-HCL. THE DECOMP. OF THE SALT FROM ETI AND 3,ET,5,BR DERIV. OF I WITH NA GAVE ONLY 1 ETHYLBENZIMIDAZOLE.

UNCLASSIFIED

USSR

UDC 53.087.92+531.7.087.92

MAR'YANOVSKIY, Ya. M., PODGOYETSKIY, M. L., GORNYI, A. V.

"Sensors Using Fluidics Sound Radiators"

Tr. Vses. N.-i. i Konstrukt. In-t "Tsvetmetavtomatika" [Works of All-Union Scientific Research and Design Institute "Tsvetmetavtomatika"], 1971, No 1, pp 138-146, (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, 1971, Abstract No 11 A159 by N. S.).

Translation: A study is made of the general properties of fluidics radiators capable of converting a continuous stream of gas or liquid into high-frequency acoustic field energy. Formulas are produced for calculation of the design characteristics of fluidics sound radiators of the stream-wedge and stream-wedge-resonator types depending on properties of the medium forming the stream, its velocity, and the geometric parameters of the radiator-screen system. Satisfactory coincidence between results of calculation and experimental results is demonstrated. 4 Figures; 13 Biblio. Refs.

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USSR

UDC: 531.787.7

PODGOYETSKIY, M. L., SHVARTSER, V. I., SHEYNKERMANN, E. Z., MOSKVIN, M. A.,
MAR'YANOVSKIY, Ya. M., LIVSHITS, A. M., PROZOROV, M. A., "Tsvetmetavto-
matika" Special Design Office

"A Pneumatic Compensation Differential Manometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzys, Tovarnyye Znaki,
No 36, Dec 71, Author's Certificate No 322676, Division G, filed 24 Nov 69,
published 30 Nov 71, p 138

Translation: This Author's Certificate introduces a pneumatic compen-
sation differential manometer which contains a diaphragm measurement unit
consisting of a support cushion, diaphragms, a diaphragm connector and a
needle gate valve. The manometer also contains a converter which changes
force to a pneumatic signal. As a distinguishing feature of the patent,
The accuracy and reliability of the device are improved by making the
diaphragm connector in the form of a hollow stepped cylinder with flanges
for fastening the diaphragms. The needle gate valve is located in the
inner cavity of the cylinder, which is equipped with a frame with contact
support element.

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1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF STRUCTURALLY REGULAR POLYPEPTIDES CONTAINING ALANINE
AND N PRIME EPSILON BENZOXYCARBONYLLYSINE -U-
AUTHOR--(04)-POROSHIN, K.T., MARYASH, L.I., GRECHISHKO, V.S., SHIBNEV, V.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(4), 19-21
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PEPTIDE, ALANINE, ORGANIC SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1302 STEP NO--UR/0425/70/013/004/0019/0021
CIRC ACCESSION NO--AT0128716
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AT0128716
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. N PRIME EPSILON -TOSYL GROUP USED
EARLIER (CA68, 30013C) WAS REPLACED BY AN N PRIME EPSILON
-BENZOXYCARBONYL GROUP (CBZ), WHICH CAN BE REMOVED FROM THE PEPTIDE
UNDER MORE GENTLE CONDITIONS. SYNTHESIS OF STARTING MONOMERS WAS
CARRIED OUT BY THE METHOD OF MIXED ANHYDRIDES. FACILITY: INST.
KHIM., DUSHANBE, USSR.

UNCLASSIFIED

USSR

ZIMONT, S. L., MAR'YASHKIN, N. Ya.

"Klebsh-Gordan Coefficients"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 15-17, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V545 by the author's).

Translation: An algorithm is suggested for calculation of any non-zero coefficient $C_{l,j,2j}^{r,m+1}$ $-l-j$.

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USSR

ZIMONT, S. L., MAR'YASHKIN, N. Ya.

"Coefficients of the Transformation of a Slater-type Wave Function to a New Center"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 9-14, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V548 by the author's).

Translation: An algorithm is suggested for calculation of the coefficients of the expansion of a Slater wave function with respect to attached Legendre polynomials to a new center. The algorithm calls for both calculation of the coefficients with fixed quantum numbers n , l and m , and calculation of the full set of coefficients in the expansion of all functions of this center.

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USSR

ZIMONT, S. L., MAR'YASHKIN, N. Ya.

"Method of Numerical Integration for Calculation of Electron-Electron Repulsion Integrals"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collections of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 18-23, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V547 by the author's).

Translation: A method is suggested for numerical integration of two-electron distribution functions using an interpolation formula in a four-step interval. The area of integration is divided into sectors, within which a net of nulls of Legendre polynomials is used.

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USSR

Aerosols

UDC 615.453.28.014.23.002.5

USSR

MARIYASIN, B. YA., NAZHESTKIN, K. P., MARTYNTSEVA, M. N., and TSETLIN, Y. M.,
All Union Scientific Research Institute of Medical Polymers, All Union Scientific
Research Institute of Disinfection and Sterilization, Moscow

"Investigation of Sprayers for Aerosol Cylinders"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 1, Jan 72, pp 39-42

Abstract: Nitrogen is often used as a propellant in forming aerosol preparations. To use it effectively, special atomizers are required as nitrogen is insoluble in most solvents and is being used only to propel the product out of the cylinders. The basic working unit in such atomizers is a centrifugal sprayer with feeding channels. The centrifugal forces press the product against the walls of the sprayer producing a thin film which breaks down into fine droplets -- the aerosol particles. Data used for calculations of centrifugal sprayer parameters include liquid utilization per second, pressure, viscosity, and base angle of the jet. When a finely dispersed aerosol is required, the angle must be increased. Most calculations used in constructing the sprayers are assuming constant pressure which is not the case under real conditions, as the pressure in the cylinders drops continuously. The jet angle becomes smaller with a decrease in the pressure inside the cylinder; this effect

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USSR

MAR'YASIN, B. YA., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 1, Jan 72, pp 39-42

is quite strong at pressures below 3 atms. The relationship between the length of the stream and the pressure is more complex: it decreases continuously as the pressure drops to 3-3.5 atms., then it begins to increase again. The diameters of the particles increase linearly, as the pressure is dropped. The crucial points occur at about 3 atm pressure, so the aerosol cylinders should be constructed in a way assuring a final pressure of 3 atms.

2/2

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1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THE ROLE OF PYOCOCCAL INFECTION IN THE PATHOGENESIS OF MYCOTIC
PROCESS -U-
AUTHOR-(02)-MAYASIS, YE. D., CHAYKINA, A.A.
COUNTRY OF INFO--USSR M
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 6, PP 45-50
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SKIN DISEASE, FUNGUS DISEASE, PATHOGENESIS, HYALURONIDASE,
DRUG TREATMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1386 STEP NO--UR/0206/70/000/004/0045/0050
CIRC ACCESSION NO--AP0133338
UNCLASSIFIED

2/2 C19

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CLINICO EXPERIMENTAL STUDIES INDICATE THAT PYOCOCCAL INFECTION MANIFESTED ON THE SKIN OR RUNNING A LATENT COURSE IS CONDUCTIVE TO A CHANGE OF SUBCLINICAL DERMATOMYCOSIS INTO ACUTE AND OF LOCALIZED, INTO EXTENSIVE DISEASE. THE ACTIVITY OF MICROBIAL HYALURONIDASE AND DEPOLIMERIZATION OF MUCOPOLYSACCHARIDES AND INTERSTITIAL SUBSTANCE OF DERMA AND VESSELS DEVELOPING UNDER ITS EFFECT UNDERLIE THIS PROCESS. THESE DATA SHOW NEW ASPECTS OF PATHOGENESIS OF MYCOTIC DISEASES AND EXTEND PROSPECTS OF THEIR THERAPY.
FACILITY: KAFEDRA KOZHNYKH BOLEZNEY STAVROPOL'SKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC: 669.765'75:548.5

VIGDOROVICH, V. N., UKHLINOV, G. A., DOLINSKAYA, N. Yu., MARYCHEV, V. V.,
Moscow

"Study of Conditions of Production of Single Crystals of bismuth and bismuth-antimony alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 57-63.

Abstract: The process of growth of single crystals of bismuth and bismuth-antimony alloys has a number of peculiarities which make it difficult to produce them reliably and to achieve structural perfection. It is particularly difficult to prevent curvature of the crystal relative to the growth direction, the appearance of parasitic blocks on one side of the single crystal and the formation of structural defects such as twins, dislocations, etc. Changing of external conditions does not eliminate these difficulties, indicating that they result from the crystallochemical nature of bismuth and antimony. The authors recommend use of the most favorable orientations of seeds to assure reproducible growth of single crystals. Optimal growth directions are recommended to provide the best structure during growth of single crystals. The optimal directions are those for which the shear planes (111) and (111)

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USSR

Vigdorovich, V. N., Ukhlinov, G. A., Dolinskaya, N. Yu., Marychev, V. V.,
Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 57-63.

are perpendicular to the crystallization front, while the directions [101]
and [101] coincide with the direction of growth.

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PRODUCTION OF ALLOYS WITH A UNIDIRECTIONAL STRUCTURE BY MULTIPLE
PASS ZONE RECRYSTALLIZATION -U-
AUTHOR-(03)-VOLPAN, A.YE., MARYCHEV, V.V., SHIROBOKOVA, T.G.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA METALLOV I METALLOVEDENIE, MAR, 1970, 29, (3), 661-663
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CRYSTALLIZATION, ALUMINUM ALLOY, COPPER ALLOY, MANGESIUM
ALLOY, ZINC ALLOY, EUTECTIC MIXTURE, CRYSTAL STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0204 STEP NO--UR/0126/70/029/003/0661/0663
CIRC ACCESSION NO--AP0129460
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 024

CIRC ACCESSION NO--AP0129460

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE POSSIBILITY OF PRODUCING ALLOYS WITH UNIDIRECTIONAL STRUCTURE (CONTROLLED EUTECTICS) BY MULTIPLE PASS ZONE RECRYSTALLIZATION IS CONSIDERED IN THE LIGHT OF EXPERIMENTAL TESTS WITH AL,CU AND MG,ZN,AL ALLOYS. BOTH PRIMARY CRYSTALS AND THE EUTECTIC TEND TO BECOME ORIENTED ALONG THE DIRECTION OF MOTION OF THE ZONE. A CERTAIN AMOUNT OF DISORDER SETS IN AT THE ENDS OF THE BARS THUS TREATED; OCCASIONAL DENDRITIC MICRO INHOMOGENEITIES CAN EASILY BE ELIMINATED.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ON PURIFYING COPPER BY ZONE RECRYSTALLIZATION -U-
AUTHOR-(03)-VIGDOROVICH, V.N., MARYCHEV, V.V., SHIROBOKOVA, T.G.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. AKAD. NAUK SSSR, METALLY, MAR.-APR. 1970, (2), 129-134.
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CRYSTALLIZATION, COPPER, METAL ZONE REFINING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1443 STEP NO--UR/0370/70/000/002/0129/0134
CIRC ACCESSION NO--AP0130376
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130376

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY ANALYSING THE PHASE DIAGRAMS REPRESENTING THE INTERACTION OF CU WITH VARIOUS IMPURITIES, A GENERAL CLASSIFICATION OF THE IMPURITIES COMMONLY ENCOUNTERED IN CU IS DERIVED WITH A VIEW TO OPTIMIZING THE REFINEMENT OF CU BY THE ZONE RECRYSTALLIZATION METHOD. IN GENERAL, THE EFFICIENCY OF CU REFINEMENT BY THIS METHOD IS INCREASED BY REDUCING THE VELOCITY OF CRYSTALLIZATION (SOLIDIFICATION). THE BEHAVIOUR OF A WIDE RANGE OF IMPURITIES IN CU CORRELATES CLOSELY WITH THEIR POSITIONS IN THE PERIODIC TABLE, WHICH MAY ACCORDINGLY BE USED TO PREDICT THE BEHAVIOUR OF IMPURITIES NOT YET STUDIED. 12 REF.

UNCLASSIFIED

UDC 621.47

USSR

MARKMAN, M. A., MARYCHEVA, G. P., and SIMANOVSKIY, L. I., All-Union Order of Labor Red Banner Scientific Institute of Current Sources

"Measurement of the Quality of Thermoelements and Batteries by Harman's Method"

Tashkent, Geliotekhnika, No 6, 1970, pp 13-17

Abstract: The application of the method proposed by T. C. Harman for measuring the quality Z of thermoelectric materials to thermocells and battery is discussed. It is shown that the error resulting from direct application of this method to thermocells and batteries may be eliminated by equalization of the temperature gradient between the p-arm and the n-arm of the thermocell. 2 figures, 1 table, 5 bibliographic entries.

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USSR

UDC 621.375.029.7:621.376

DERYUGIN, I. A., KURASHOV, V. N., MAR'YENKO, V. V.

"Signal Detection in a Maser"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 351-353

Abstract: A study was made of signal detection in a ruby maser operating at 77° K. As a result of nonlinear interactions in the working medium of the maser, variable magnetization appears at the modulation frequency which induces a signal of corresponding frequency in the inductance coil encompassing the resonator. The voltage on the coil was measured as a function of the modulation coefficient, power of the AM signal and the pumping power of the maser. Increasing the pumping power leads to equalization of the signal level population as a result of which the signal induced in the coil drops to zero. A further increase in pumping power inverts the spin system. The signal taken from the coil at this time is amplified significantly until the maximum inversion in the spin system is reached. The paramagnetic amplification coefficient in the experiment was about 10 decibels.

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and thermal-insulating jacket. Into the glass is placed coaxially an inner glass with a short wide tube in the bottom over which is mounted a glass cover with air plug and which is designed for the separation of reacting phases. The mixer is mounted into the tube soldered into the cover of the calorimetric vessel. The temperature of the system is measured by a thermistor connected to a dc bridge with mirror galvanometer which serves as the source of zero-indicator. The accuracy of temperature measurements is $\pm 0.0003^{\circ}\text{C}$. 1 ill.

V. S. K.

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USSR

UDC 536.62.08(088.8)

KLETENIK, YU. B., MARUYEVA, N. N., Institute of Physico-Chemical
Principals of Processing Base Minerals, Siberian Department of
the USSR Academy of Sciences

"Calorimeter for the Determination of Heat of Extraction Processes"

USSR Author's Certificate No 251871, filed 30 Jan 68, published
6 Feb 70 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8,
Aug 70, Abstract No 8.32.643 P)

Translation: Design is proposed of a calorimeter for the deter-
mination of heat of the extraction processes. The calorimetric

USSR

UDC: 621.396.6-181.5

KOROL'KOV, N. V., MARYSHEVA, G. I., MAMATOV, Yu. A., TSAGARELI, D. V.

"Thin Ferromagnetic Films. (Some Problems of Magnetization)"

Tonkiye ferromagnitnyye plenki. (Nekotoryye voprosy namagnichivaniya) (cf. English above), AN SSSR, Vychisl. tsentr, Moscow, 1970, 59 pp, ill. 20 k. (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V264 K)

Translation: The paper is made up of five sections: characteristics of actual thin magnetic films, stability conditions and complete recording of information on a thin cylindrical magnetic film with longitudinal preferred axis of magnetization, magnetizing a thin magnetic film, investigation of the dissipation flux of cylindrical magnetic films on an electric model, and the process of energy transmission during magnetic reversal of a thin magnetic film by rotation. I. M.

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Agriculture

USSR

UDC 575.23:582.951.4:517

KUDIN, A. N., SHKVARNIKOV, P. K. and MAR'YUSEKIN, V. F., Department of Experimental Mutagenesis, Institute of Molecular Biology and Genetics, Ukrainian SSR Academy of Sciences, Kiev

"The Induced Variability of Quantitative Characteristics in Wheat"

Kiev, Tsitologiya i Genetika, Vol 7, No 6, Nov/Dec 73, pp 516-522

Abstract: The progeny of an erectoid mutant of bread spring wheat obtained by gamma irradiation of the Novosibirsk-7 type were studied. For 48 of the best lines obtained data are presented on length of the vegetative period, productivity, quantity and quality of gluten and protein and the weight of 1000 grains. These data are said to show an increased heterogeneity of the population compared to starting material, indicating that the macromutation was accompanied by mutations of the various factors of the polygenous system controlling these quantitative characteristics. Several of the lines were superior to the starting material or the parent generation in one or more of the characteristics, indicating the usefulness of this approach in hybridization.

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1/2 011
UNCLASSIFIED
TITLE--AUTOMATIC DISCRETE CONTROL OF PULP DENSITY -U-
AUTHOR--(03)-MARYUTA, A.N., BUNKO, V.A., OBLETISOV, E.I. *M*
COUNTRY OF INFO--USSR
SOURCE--GORN. ELEKTROMEKHAN. I AVTOMATIKA. RESP. MEZHVED. NAUCHNO-TEKH.
REFERENCE--MOSCOW, REFERATIVNYY ZHURNAL, METALLURGIYA, NO 4, 1970,
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--MINING ENGINEERING, ORE BENEFICIATION, FLUID DENSITY, CRUSHING
PLANT, INDUSTRIAL AUTOMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2062

STEP NO--UR/0000/70/000/014/0152/0156

CIRC ACCESSION NO--AR0127435

UNCLASSIFIED

2/2 - 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AR0127435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A CHAIR OF THE DNEPROPETROVSK MINING INSTITUTE, AN AUTOMATIC DISCRETE PYCNOMETER WAS DEVELOPED BASED ON THE PRINCIPLE OF AUTOMATIC SELECTION OF PULP FROM A FLOW WITH A MEASURING JAR. THE CHARACTERISTIC FEATURE OF THE UNIT WHICH WAS DEVELOPED IS THAT THE FLOW SAMPLING MOMENT AND PULP DENSITY MEASUREMENT ARE TIME SEPARATED. AN EXPERIMENTAL MODEL OF THE DEVICE WAS TESTED UNDER INDUSTRIAL CONDITIONS. PULP DENSITY WAS MEASURED IN ROD MILL DISCHARGE AT THE CONCENTRATING PLANT OF THE KAMYSHBORUNSKLY COMBINE. MEASUREMENT ERROR WAS PLUS OR MINUS 0.02 KG-L. BASED ON THE DISCRETE DENSIMETER, A SYSTEM WAS DEVELOPED FOR AUTOMATIC CONTROL OF PULP DENSITY IN ROD MILLS WHICH IS UNDERGOING EXPERIMENTAL INDUSTRIAL TESTS AT THE PLANT.

UNCLASSIFIED

USSR

UDC 614.31:628.16.067

PANASENKO, G. I., Candidate of Medical Sciences and OMEL'YANETS, N. I.,
Scientific-Research Institute of General and Communal Hygiene imeni A. N.
Marzeyeva, Kiev

"Hygienic Evaluation of a Portable Ion Exchange Filter for Field Purification
of Drinking Water

Moscow, Gigiyena i Sanitariya, No 7, 1972

Translation: A portable ion-exchange filter (PIF) which contains, in addition to ion exchange resins, biologically active fibers for disinfecting the processed water while simultaneously serving as a drainage device and which is used for field purification of drinking water, has been developed and tested.

The PIF (see illustration) consists of four ion-exchange columns connected in sequence by rubber tubes and enclosed in a case. The halves of the case are fastened by four Kapron bolts; each of the columns is placed in a recess and may be replaced easily. In carrying position, the column is equipped with two polyethylene covers, covered by a fitting.

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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., Gigiyena i Sanitariya, No 7, 1972



A Portable Ion-Exchange Filter (inside view)

The experimental PIF samples issued are intended for domestic use and in this case the water enters the filter after it has been connected to the water supply system by a rubber hose. The filter case has special recesses for fastening it to the wall. In order to obtain drinking water directly from a reservoir under field conditions, the PIF should be equipped with a device which provides for collection and filtration of the water (a siphon, etc.).

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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., Gigiyena i Sanitariya, No 7, 1972

The assembled ion exchange filter is 215 mm high, 145 mm wide and 48 mm thick. Each of the four columns contains 60 ml of ion exchanger. The overall capacity of the device is 300-400 liters. In operation, it filters from 10-25 m/hr.

During passage of the water, the ion exchange columns are filled in the following order: the first two -- by IA-1r anionite, the third by AV-22 anionite and the fourth by AV-172 anionite. A dehydrogenated polyvinyl alcohol fiber with a quaternary ammonium base is used as a decontamination agent in the portable ion exchange filter. The PIF filtering column is made from Mark 10702 (MRTU Interrepublic Technical Standard]-6-05-1086-69) polyethylene which is authorized for use in the food industry. We established also that it does not change the quality of the water touching it and may be used for the preparation of PIF filtering columns.

We performed laboratory experiments to study the effect of the portable ion exchange filter on the quality of the processed water. In essence, we filtered tap water through the PIF at a filtration rate of 5-7 m/hr daily for 5 months. In the course of the experiment, we filtered 528 liters of tap water through the PIF; i.e., we filtered 2200 volumes of water through 1 volume of ion exchanger.

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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., *Gigiyena i Sanitariya*, No 7, 1972

As a result, it was established that the filtered water does not acquire foreign off-flavor and odors from contact with the ion exchange resins and its clarity and oxidizability is decreased 2-3 times in comparison to control water. The saline content of the processed water is unchanged and monomers are not observed in it (G. I. Panasenکو and coauthors). We studied also the total microbial contamination of water filtered through the PIF. We found that the biologically active fiber used in the filter does not guarantee a disinfecting effect; on the contrary, the microbial contamination of the filtrate is increased from 15 to 140 times (G. I. Panasenکو). Analogous results resulted from filtration of Arkhangel tap water (color value 60-90 degrees).

Thus, the biologically active fiber with a quaternary ammonium base which, under static conditions, possesses bacterial properties, does not cause, under dynamic conditions (filtration of water), a bactericidal effect, apparently because of the short (nearly 1 minute) duration of contact of the water and the fiber and the splitting from the polymer of active groups which ensure a bactericidal effect during prolonged filtration.

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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., *Gigiyena i Sanitariya*, No 7, 1972

Since chemical substances which often cause a biological effect on warm-blooded animals may be separated from ion-exchange resins, we performed chronic sanitary and toxicological experiments on laboratory animals for a final solution of the problem concerning the possibility of using PIF for production of drinking water. The experiment, which lasted for 5 months, involved three groups of 130-150 g male white rats. Each group received water from an automatic spigot; control rats received dechlorinated tap water, the first experimental group received water filtered through the PIF, filled only with biologically active fiber and the second experimental group received water, processed in a PIF, filled with IA-1r, AB-22-172 ion exchange resins and biologically active fibers.

We found that the general condition and behavior of the experimental animals and also their water consumption differed in no way from that of the control animals. Weight increase of the experimental groups was on a level with that of the control rats and averaged 25-30 g monthly.

In the course of the experiment, the percent content of hemoglobin in all groups of animals varied, but was within physiological norms (12.3-14.7 g
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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., *Gigiyena i Sanitariya*, No 7, 1972

percent). We did not obtain reliable results in a study of the erythrocyte, leukocyte and reticulocyte counts in the blood of all groups of animals. The formed elements of the blood of animals remained within physiological norms. The phagocytic activity of leukocytes, which was determined by the phagocytic number, varied from 3.59 to 4.49 in all groups.

The content of free SH-groups in the blood of animals changed insignificantly during the experiment and statistical processing revealed no reliable differences. The blood sugar level in experimental animals was the same as in control animals. Adrenalin loading did not induce any noticeable differences in control or experimental animals. The same results were obtained from a study of the latent iron-binding capacity of the blood transferrin.

We found no reliable differences in the weight coefficients of the internal organs and during a study of the ascorbic acid level in the adrenal glands. The study of the toxic properties of water treated by the PIF on transplanted cultures of Ner-2 and KB cells showed no cytopathogenic effect of the water. Pathohistological examination of the internal organs of sacrificed animals showed identical changes in the control and experimental groups.

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USSR

PANASENKO, G. I., and OMEL'YANETS, N. I., *Gigiyena i Sanitariya*, No 7, 1972

Conclusions

1. The portable ion exchange filter decreased the color value and oxidizability of high-color water 2-3 times. Water, treated with PIF, had no toxic effect upon transplanted Ner-2 and KB cells.
2. Prolonged consumption of the PIF processed water by animals did not harm their organisms.
3. PIF with anionites IA-1r, AB-22 and AB-172 may be recommended for producing drinking water under field conditions but only for supplementary disinfection of treated water.

Bibliography

1. Panasenکو, G. I. In the book: *Hygienic Evaluation of Bactericidal Tissue From Polyvinyl Alcohol Fiber*. Kiev, p 23, 1969.
2. Panasenکو, G. I., Vlasova, L. P., Miropol'skiy M.U. and others, In the book: *Hygiene of the Use of Polymer Materials and Articles Made From Them*. Kiev, p 198, 1969.

7/7

USSR

UDC 51:330.115

LAVROVSKIY, B. L., MASAKOV, V. M.

"Model of Interbranch Balance of Production Capacities with Optimization"

Probl. Narodnokhoz. Optimuma [Problems of the National Economic Optimum -- Collection of Works], No 3, Part 1, Novosibirsk, 1970, pp 196-219, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V545).

NO ABSTRACT.

USSR

UDC: 621.375.82

IONIN, A. A., MALYSHEV, V. I., and MASALOV, A. V.

"Increasing the Degree of Self-Synchronization of the Modes in a Neodymium Glass Laser"

Kratkiye soobshch. no fiz. (Brief Communications in Physics) No 8, 1972, pp 61-66 (from RZh--Fizika, No 4, 1973, Abstract No 4D1209)

Translation: An investigation is made into the characteristics of the radiation of two coupled neodymium glass lasers with a passive gate. The radiation in one laser is developed from the partially synchronized radiation of the other. A schematic of the equipment is given. The necessary conditions for effective self-synchronization of the modes (SM) in the controlled laser are indicated. By choosing the amount of coupling, the authors succeeded in obtaining an increase in the degree of SM (the percentage modulation of the controlled laser's radiated pulse increased to 100% and the radiation spectrum was markedly broadened). The experimental results agree closely with values for the oscillation development time. Bibliography of 10. I. O. S.

1/1

1/2 037 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STRUCTURE OF SOLID LASER SPECTRA UNDER FREE GENERATION CONDITIONS
-U-
AUTHOR--(03)--MALYSHEV, V.L., MASALOV, A.V., SYCHEV, A.A.
COUNTRY OF INFO--USSR
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TOPIC TAGS--RUBY LASER, NEODYMIUM LASER, TRAVELING WAVE, RADIATION
SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIATION SPECTRA OF THE RUBY AND ND-GLASS LASERS, WORKING UNDER TRAVELING WAVE CONDITIONS, WERE INVESTIGATED. AN ELIMINATION OF BOTH THE SELECTION AND SPACE INHOMOGENEITY OF THE RADIATION FIELD DID NOT REMOVE THE IRREGULAR STRUCTURE OF THE FREE GENERATION SPECTRA. THIS STRUCTURE IS AN INTEGRAL PROPERTY OF SOLID LASERS DURING AN EXCITATION OF A GREAT NO. OF AXIAL MODES AND CONFIRMS THE FLUCTUATING CHARACTER OF THE RADIATION FIELD. THE IRREGULAR STRUCTURE OF THE SPECTRA WAS OBSD. EVEN IN BOTH LASERS WITH PASSIVE SHUTTERS; UNDER CERTAIN CONDITIONS, ALSO THE SMOOTH SPECTRA (WITH AN ACCURACY TO THE INTERMODE DISTANCE), ATTRIBUTED TO THE PRESENCE OF ONLY 1 PULSE ON THE AXIAL PERIOD (I.E. TO A COMPLETE SELF SYNCHRONIZATION OF THE MODES), WERE OBSD. FACILITY: FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

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UDC 621.372.8

USSR

KIRILENKO, A. A., MASALOV, S. A., Institute of Radio Physics and Electronics
of the Ukrainian SSR Academy of Sciences

"Diffraction of H-Polarized Waves on a Louver-Type Ribbon Array"

Gor'kiy, Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika, Vol XV, No 1,
1972, pp 83-97

Abstract: The problem of diffraction of plane waves on a periodic structure made up of infinitely thin ideally conducting strips the planes of which form an arbitrary angle ψ with the normal to the plane of the array is investigated by the semiinversion method. A detailed analytical and numerical study was made of the characteristics of the scattered field, and special attention was given to the resonance properties of the array.

The method used is essentially based on the results of previous papers [S. A. Masalov, et al., Zhurn. vychisl. matem. i matem. fiz., Vol 9, No 4, 693, 1970; E. A. Whitehead, Proc. IEE, Vol 98, No 3, 133, 1951]. It leads to systems analogous to the systems of A. A. Kirilenko, et al. [Mezhved. sb. Radiotekhnika, Khar'kov State University, Khar'kov, No 13, 15, 1970]. The case of H-polarization is investigated. With evaluation of the error, the solution of the problem is obtained in the form of simple analytical formulas. The long

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USSR

KIRILENKO, A. A., et al., Izvestiya vysshikh uchevnykh zavedeniy, Radiofizika,
Vol XV, No 1, 1972, pp 83-97

wave asymptotic form of the solution is found, and resonance phenomena occurring in this type of structure are detected and explained.

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USSR

UDC 621.396.677

MASALOV, S. A., REPA, YU. T.

"Wave Diffraction on an Array of Rectangular Dielectric Bars"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio Engineering. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 20, pp 116-127 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 5B5)

Translation: The solution of the problem of diffraction of an H-polarized normally incident wave on a dielectric array is obtained in the strict statement. An analytical and numerical analysis of the problems of E and H-polarization are performed. It is demonstrated that the truncation method is applicable to the systems obtained, and in individual cases the method of successive approximations can be used. They are found with an error estimate for the resonance transmission points. It is established numerically that in the E and H cases for certain values of the parameters of the problem, the array will have total resonance reflection. It is noted that the investigated method of investigation can be extended to other diffraction problems. There are 5 illustrations and a 2-entry bibliography.

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- 8 -

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RIGOROUS SOLUTION TO THE PROBLEM OF DIFFRACTION OF ELECTROMAGNETIC
WAVES BY A RIBBON STRUCTURE -U-
AUTHOR-(02)-MASALOV, S.A., SOLOGUB, V.G.

COUNTRY OF INFO--USSR M

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TOPIC TAGS--ELECTROMAGNETIC WAVE DIFFRACTION, LINEAR EQUATION, ALGEBRAIC
EQUATION, ELECTRON POLARIZATION

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE PROBLEM OF DIFFRACTION OF PLANE ELECTROMAGNETIC WAVES BY A PERIODIC STRUCTURE FORMED BY AN INFINITE SYSTEM OF PARALLEL STRIPS OF IDENTICAL THICKNESS. USING CERTAIN RESULTS OBTAINED BY BERZ (1951) AND AGRANOVICH ET AL. (1962), THE PROBLEM IS REDUCED TO THE SOLUTION OF INFINITE SYSTEMS OF LINEAR ALGEBRAIC EQUATIONS, THESE EQUATIONS ARE THEN REGULARIZED, THE EXISTENCE OF A SOLUTION TO THE INITIAL PROBLEM IS SHOWN, AND TWO METHODS OF SOLVING THE REGULARIZED INFINITE SYSTEMS ARE DEMONSTRATED. THE SPECIAL CASE OF E POLARIZATION IS DISCUSSED.

UNCLASSIFIED

AA0040514

Maslov, Yu. A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

239780 ARC DISCHARGE EXCITER has a switching control to increase the cathode area simultaneously with disconnection of the heating source. Prior to ignition a plasma forming gas (2) is passed through the burner (1), contactor (3) is closed, connecting branches (A,B) of the cathode in series. Cathode heating uses one section of the power source, the anode voltage being taken from section (D). When the arc discharge (7) develops current relay (8) opens contacts (9) and closes contacts (10), connecting the cathode branches in parallel, and both sections of the power source in series to give the required anode voltage. Variable resistance (11) controls the heating current and the current/voltage characteristics of the arc power source. This system can be used in arc welding under vacuum or in an inert atmosphere.

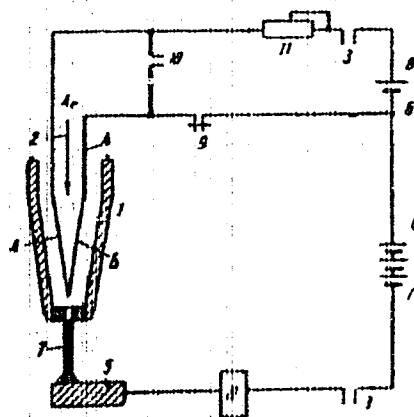
1.4.68 as 1229230/25-27. D.A.DUDKO et alia.E.A.
PATON ELECTRIC WELDING INST. (24.7.69) Bul 11/18.3.69
Class 49h. Int.Cl.B 23k.

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